



Action Memorandum/Remedial Action Plan: Cleanup Activities at Central Magazine Area (CMA) Former Ranges 106 and 107; Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, CA

Draft

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PURPOSE

The purpose of this Action Memorandum/Remedial Action Plan is to document, for the Administrative Record, the United States Marine Corps (Marine Corps) decision to undertake a Time-Critical Removal Action (TCRA) at the Former Ranges 106 and 107. This TCRA is being conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and is consistent, to the maximum extent possible, with Chapter 6.8 of the California Health and Safety Code (Ca-HSC).

The Central Magazine Area (CMA) is currently out of compliance with Explosive Safety Quantity Distance (ESQD) regulations (Department of Navy [DON], 2002) because of the volume of stored munitions and the proximity to Phillips Road. A temporary waiver from the Chief of Naval Operations (CNO) was issued to continue operations, with the stipulation that activities be commenced to construct additional storage capacity. Therefore, the Marine Corps has initiated efforts to expand and redistribute storage at the CMA by constructing five additional storage bunkers, a new battery-charging station, and two additional hardstand ammunition breakdown pads. The CMA expansion is being conducted as Military Construction (MILCON) Project P-683.

The CMA expansion requires the use of 30 acres of land, which was previously associated with Former Ranges 106 and 107 (see Figure 1). These ranges were used for small arms and mortar training during the

early 1970s until approximately 1985. As a result of these past operations, unexploded ordnance (UXO) and small arms munitions have been identified in the area (see Table 1).

UXO may present an explosion hazard to construction personnel working on the CMA expansion, follow-on civilian and military workforce of the CMA after construction. Therefore, this Action Memorandum initiates activities to eliminate this hazard prior to construction.

BACKGROUND

Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms is an active military installation which consists of approximately 934 square miles in San Bernardino County, CA. Former Ranges 106 and 107 are located in a remote desert area, separated from the nearest community by 2 miles of sparsely populated desert, and 6 miles from the city of Twentynine Palms (approximate population: 15,000). The Marine Corps established MCAGCC in 1952 as an artillery and antiaircraft weaponry range with an emphasis on conducting and evaluating live-fire training exercises. Former Ranges 106 and 107 were used to train Marines in use of small arms and mortars.

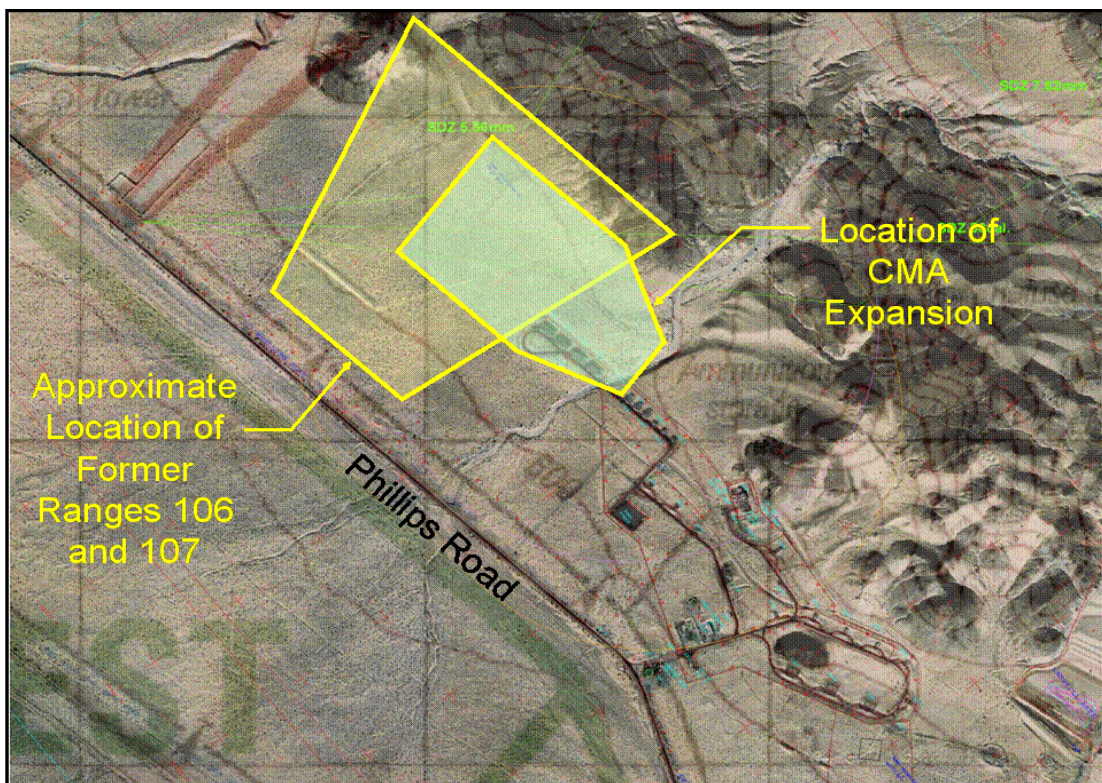


Figure 1. Location of CMA Expansion and Former Ranges 106 and 107

Table 1. UXO and Small Arms Identified at Former Ranges 106 and 107

Type	Quantity
60-mm High Explosives (HE)	3
60-mm White Phosphorous (WP)	3
60-mm Illuminating	5
81-mm HE	7
81-mm WP	2
81-mm Illuminating	3
5.56-mm Ball	20
7.62-mm Ball	5
.30-caliber Ball	2

Other Environmental Actions

To date, an Environmental Assessment (DON, 2002), a Draft Preliminary Assessment (PA) (Battelle, 2003), and an Explosives Safety Submission (ESS) (ECC, 2003) have been completed for Former Ranges 106 and 107.

State and Local Authorities Roles

The Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB), Colorado River Region, are providing review input on this TCRA.

ENDANGERMENT DETERMINATION

In accordance with the NCP, the following threat applies to conditions at the CMA area:

- [40.CFR.300.415(b)(2)(vi)] – Threat of fire or explosion.

UXO and other explosives will be removed from the former Ranges 106 and 107 area before initiating construction of the CMA expansion.

A PA of former Ranges 106/107 was conducted in August 2003 and concluded that UXO may pose an immediate threat to human health and safety for those personnel involved with construction of the CMA, follow-on workforce of the CMA, and the public utilizing Phillips Road if the TCRA is not taken.

REFERENCES

Battelle. 2003. *Draft Preliminary Assessment at Central Magazine Area (CMA), Former Ranges 106 and 107 MCAGCC Twentynine Palms, California*. Prepared by Battelle for MCGACC. August.

Environmental Chemical Corporation (ECC). 2003. *Final Explosives Safety Submission Munitions Response Action, MILCON Project P-683, Central Magazine Area, Marine Corps Air Ground Combat Center, Twentynine Palms, CA*. Prepared for Southwest Division, Naval Facilities Engineering Command, under Navy Unexploded Ordnance Response Contract No. N62742-99-D-1800, Contract Task Order No. 0010. April 17.

United States Department of Navy (DON). 2002. *Final Environmental Assessment, Proposed Ammunition Storage Facilities (P-683) at Marine Corps Air Ground Combat Center, Twentynine Palms, CA*. Prepared by the U.S. Marine Corps. September.

PROPOSED ACTION

The final ESS identifies proposed activities for mitigating UXO hazards associated with construction on Former Ranges 106 and 107 associated with the CMA expansion. This removal action is scheduled to start as soon as practicable and upon approval acceptance of comments received during the public comment period. Initial site preparation will involve an access survey where the MCAGCC UXO team will survey approach routes to the proposed construction site from known ordnance-free areas. Actual and potential UXO on the soil surface will be marked and avoided. No construction personnel will be permitted outside of the surveyed areas.

Prior to the start of excavation activities, a visual and instrument-aided sweep of the entire construction area will be conducted. All ordnance and nonordnance scrap (spent small arms cases, bullets, clips, projectiles and projectile fragments, and other operational residues) will be removed from the surface and staged in designated areas. This material will undergo a secondary inspection by trained Explosives Ordnance Disposal (EOD) personnel before it is certified for removal from the site. All inert range residue and operational waste will be processed in accordance with current disposal procedures in effect for all range areas on MCAGCC.

Surface UXO will be disposed of by detonation, after assurances that adequate distances from public roads, existing magazines, and inhabited buildings are confirmed. The evacuation of personnel and blockage of access routes also will be confirmed before any detonation operations. Engineering controls will be used to ensure complete detonation of UXO while addressing blast/fragmentation hazards, when required.

Surface/subsurface investigations will be conducted of the CMA construction footprint and the new access road corridor. The investigation area will include the newly fenced area and an additional buffer zone of 30 ft around the fence perimeter. An area of 10 ft on either side of the access road will also be cleaned. Anomalies identified during the sweep will be excavated to a depth of 4 ft, which is 1 ft deeper than the maximum penetration depth of the mortar with the greatest fragmentation distance (MGFD).

UXO clearance is necessary to protect construction workers involved in the CMA expansion, and the military and civilian workforce after construction is complete. If this action is delayed or not taken, it could affect the training mission of the MCAGCC. The Marine Corps is responsible for this removal action, and will perform this action promptly and properly.

Funding for this removal action has been incorporated into MILCON Project P-683.

CONTACT

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RECOMMENDATION

The purpose of this Action Memorandum is to recommend a time-critical removal action to protect the health and safety of construction workers associated with the Central Magazine Area expansion, and the military and civilian workforce at the CMA after the construction is completed. The recommended removal action is to remove, certify, and dispose of nonexplosive residues off-site, and detonate all surface and subsurface (to 4 ft bgs) unexploded ordnance from the area of proposed construction. After the removal action is complete, construction of additional ammunition storage facilities will commence to meet the mandates of future training and bring the facility into compliance with Explosive Safety Quantity Distance regulations.

This decision document represents the selected removal action for Former Ranges 106 and 107, at MCAGCC Twentynine Palms, CA, and was developed in accordance with the Comprehensive Environmental Response Compensation and Liability Act and the National Contingency Plan. This decision is based on information available in the administrative record for the site.

CHRISTIAN B. COWDREY
Brigadier General
MCAGCC Twentynine Palms
Commanding

Date